Philosophy 9
Spring 2007 Exam #1

Please follow all directions and show all your work whenever possible. For truth tables, etc., please mark the features of your work that determine the answer you obtain. You have one hour to complete this exam, so be mindful of the time.

I. Evaluate the following arguments for validity and soundness. (10 points each; 5 for each part of your answer)

1) All lions are housecats. All housecats are felines. Therefore all lions are felines.

2) Some penguins are black and white, and some zebras are black and white. Therefore, some penguins are zebras.

II. Translate the following compound statements into logical notation. Please provide a key defining capital letters as grammatically complete simple statements. Expose as much of the logical structure in each statement as you can. (10 points each; 5 points for your key, and 5 for your translation)

3) Neither Catherine nor Irene likes philosophy, but Ryan does and he will pass logic.
4) Both Sony and Panasonic do not manufacture Ham Radios; however if Yaesu does, then they will be made in Japan.

III. Determine the truth value of the following compound statements, assuming the following truth values: P=T, Q=T, R=F, S=F. Show your work. (10 points each)

5) $\sim[P \equiv (Q \vee S)]$

6) $(P \equiv S) \rightarrow \sim \{[(Q \vee Q) \rightarrow S] \bullet R\}$

IV. Determine whether the following compound statement is a tautology, a self-contradiction, or a contingent statement using a complete truth table. Indicate what feature of your truth table determines your answer. (10 points)

7) $(E \rightarrow F) \vee \sim(\sim E \vee F)$

V. Determine using a complete truth table whether the following two statements are equivalent, contradictory, and consistent/inconsistent. Just say yes or no to each of

these concepts for your answer (e.g. Yes Equivalent, Yes Contradictory, and Yes Consistent). Indicates what feature of your truth table determines your answer. (10 points)

8) $(\sim G \bullet H) \rightarrow I$ -and- $\sim[(\sim G \bullet I) \vee H]$

VI. Using a complete truth table, determine whether the following argument is valid or invalid. Indicate what feature of your truth table determines your answer. (10 points)

9) $G \rightarrow H$
$R \equiv G$
$\underline{\sim H \vee G}$
$R \equiv H$

VII. Using a shortened truth table, determine whether the following argument is valid or invalid. (10 points)

10) $\sim I$
$G \rightarrow H$
$H \rightarrow I$
$\underline{\sim J \rightarrow G}$
J

Extra credit: provide a counterexample in ordinary language that shows the following argument form to be invalid. Only incontrovertible counterexamples will be accepted. (5 points)

$p \rightarrow q \;\; / \;\; q \;\; // \;\; p$